

# REQUEST FOR ADDITIONAL INFORMATION 780-5888 REVISION 3

7/20/2011

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 18 - Human Factors Engineering  
Application Section: 18.1.1.2

QUESTIONS for Operating Licensing and Human Performance Branch (AP1000/EPR Projects) (COLP)

18-129

**Regulatory Guidance:** NUREG-0711 Criterion 2.4.1(3) states, "*Applicable Facilities—The HFE program should address the main control room, remote shutdown facility, technical support center (TSC), emergency operations facility (EOF), and local control stations (LCSS).*"

**Evaluation:** The response to Question 18-8 from RAI 295-2341, Revision 1 stated, "The same approach as the NUREG-0711 program is applied to the process for EOF/TSC. However, processes other than the task analysis, such as the function allocation or the staffing, etc, [are] very clear and therefore needless to analyse for EOF/TSC."

Question 18-108 from RAI 728-4534 Revision 2 included a concern that this was not a sufficient description of how the HFE design of the EOF is being managed.

From the responses in these two RAIs the staff understands the scope of work addressed by the DCD and by the COL applicant and the acceptance criteria that will be applied. We still do not understand the process being applied to identify the EOF communication and indication requirements that are within the scope of the DCD. More specific concerns are:

- The task analysis referenced in the DCD, Section 18.1.1.2 appears to be the same task analysis being done for the Main Control Room (MCR) operators. The staff's experience is that there are some tasks unique to the EOF that would not be included in the MCR operator task analysis. Examples include integration of offsite dose readings and making protective action recommendations to government agencies.
- In the case of function allocation it is obvious that there are no automated plant controls. For other functions such as communications and information integration in support of EAL declarations, it is not obvious to the staff that no analysis is needed. In any case, the basis for not applying an element needs to be explicitly stated so the staff has a clear understanding of the process being used as it is this process rather than the final design that is the basis for our safety conclusions.

The staff acknowledges that NUREG-0711 does not provide guidance specific to the EOF but since the EOF is included in the scope of this NUREG and Human Factors is

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generically cited in NUREG-0696, we believe a more complete description of the process you will use for the portion of the EOF design within the DCD scope is appropriate.

**Information Request:**

Explain the HFE design process being used to develop the EOF HFE design. If you choose to follow the elements of NUREG-0711, explain how elements are accomplished or provide an explicit basis for why they are not used.

**References:**

MHI's Responses to US-APWR DCD RAI No. 295-2341; MHI Ref: UAP-HF-09225; dated April 28, 2009; ML091210213

MHI's Responses to US-APWR DCD RAI No. 728-4534; MHI Ref: UAP-HF-11125; dated April 28, 2011; ML11123A024